

2.(canceled) The sensor of claim 1 further including a monitor.

3.(canceled) The sensor of claim 1 further including a computer.

4.(canceled) A sensor for measuring position and orientation of an object comprising:

an imaging device;

a first feature of an alignment target;

a second feature of an alignment target;

whereby the relative position and size of said first feature and said second feature measures up to three orthogonal position and up to three orthogonal orientations of said object with respect to said imaging device when said first features is in focus and said second feature is out of focus in said imaging device.

5.(canceled) The sensor of claim 1 wherein the imaging device is a camera.

6.(canceled) The sensor of claim 1 further including a monitor.

7.(canceled) The sensor of claim 1 further including a computer.

8.(new) A position and orientation sensor, comprising:

an alignment target having a first optical feature a fixed distance from a second optical feature;

an imaging device that can form an optical image of said alignment target with said first feature in focus and said second feature out of focus;

whereby the location and size of said first feature compared to the location and size of said second feature in said optical image are measurements of up to three orthogonal positions and up to three orthogonal orientations of said alignment target with respect to said imaging device.

9. (new) The sensor of claim 8 wherein one or more of said features is a cross hair.
10. (new) The sensor of claim 8 wherein said imaging device comprises a lens and a transparent projection screen.
11. (new) The sensor of claim 8 wherein said imaging device is a camera.
12. (new) The sensor of claim 8 further including a monitor connected to said imaging device.
13. (new) The sensor of claim 8 further including a computer connected to said imaging device.
- 

**Conditional- request for constructive assistance**

If for any reason this application is not believed to be in full condition for allowance, applicant respectfully requests the constructive assistance and suggestions of the examiner pursuant to M.P.E.P. & 2173.02 and 707.470) in order that the undersigned can place this application in allowable condition as soon as possible and without the need for further proceedings.

Sincerely,

*Charles S. Vann*

Charles S. Vann  
1425 Drake Avenue  
Burlingame, CA 94010  
Tel: (650)375-1136 (home)